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EXAMINER

WINTER, GENTLE E

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| ART UNIT | PAPER NUMBER |
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1746

DATE MAILED: 07/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/514,526

Applicant(s)

FARQUHAR ET AL.

Examiner

Gentle E. Winter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Arguments—Withdrawn, Maintained in Parts and New

1. Applicant's amendment to claim 18 does provide the requisite clarification as to what is being claimed so as to bring the claim into compliance with 35 USC § 112 second paragraph. The pending rejection is therefore withdrawn however a new rejection is directed to the claims that have not been amended in conformity with the issue raised in conjunction with claim 18 and the claims depending from that claim.

2. With respect to the rejection of claims 18-21 under 35 U.S.C. §102(b), applicant argued:

Applicants respectfully contend that Geshner does not anticipate claim 18, because Geshner does not teach each and every feature of claim 18 as amended herein. For example, Geshner does not teach an apparatus comprising "a conveyorized device..."

3. Applicant's arguments have been considered, and are persuasive. The conveyorized device is apparently not explicitly disclosed in Geshner. As such the anticipation rejection of claim 18 based on Geshner is withdrawn.

4. With respect to the arguments regarding claim 32, and by extension 31, from which 32 depends, and 21 applicant argues:

Applicant's submit that independent claim 31 from which 32 depends, includes the same features as claim 18 discussed *supra*. Applicant's further submit that claim 32 is allowable for the same reasons.

5. Applicant's arguments have been carefully considered but unfortunately are not persuasive at this time. The instant claim is not drawn to a conveyerized device with a spray nozzle, but rather an electrical structure.

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6. Claims 22-25, 28, 29 31, 33, 34, and 36 were rejected under 35 USC §103(a) as unpatentable over Geshner as applied to claims 18-21 above, in view of Abolafia. In response applicant's argued:

Applicants respectfully contend that claims 22-25, 28, and 29 are not unpatentable over Geshner and Abolafia, because Geshner and Abolafia, taken alone or in combination, do not teach or suggest each and every feature of independent claim 18 from which claims 22-25, 28, and 29 depend. For example, Geshner and Abolafia do not teach or suggest, *inter alia*, "a chromium volume, wherein said chromium volume is operationally positioned in a conveyorized processing apparatus." Rather, as noted *supra*, Geshner does not disclose an apparatus in which the method disclosed therein occurs. Similarly, Abolafia does not disclose an apparatus in which the method disclosed therein occurs.

7. Applicant's arguments have been considered, and are persuasive because Geshner does not disclose the conveyorized component.

8. With respect to claims 31, 33, 34, and 36 applicant suggest that the claim has the same limitations. This appears to reflect an oversight, claims 31, 33, 34, and 36, as they are presently before the Office, do not disclose the conveyerized apparatus of claim 18. As such the arguments are not persuasive at this time.

9. As to claims 22-25, 28, and 29 which were rejected under 35 USC §103(a) as unpatentable over Geshner and Abolafia in view of Ricks, applicant's argued:

Applicants respectfully contend that claims 22-25, 28, and 29 are not unpatentable over Geshner and Abolafia in view of Ricks, because Geshner, Abolafia, and Ricks, taken alone or in combination, do not teach or suggest each and every feature of independent claim 18 from which claims 22-25, 28, and 29 depend. For example, Geshner and Abolafia, as discussed *supra*, as well as Ricks, do not teach or suggest, *inter alia*, "a chromium volume, wherein said chromium volume is operationally positioned in a conveyorized processing apparatus." Rather, as noted *supra*, Geshner and Abolafia do not disclose an apparatus in which the method disclosed therein occurs. Similarly, Ricks does not disclose an apparatus in which the method disclosed therein occurs. Further, Ricks teaches away from the instant invention, since Ricks is directed towards an electroplating process for depositing chromium onto a surface (*i.e.*, reverse etching), rather than etching chromium away from a surface. In any event, Ricks does not teach or suggest, *inter alia*, etching a chromium volume, and therefore the rejection based on Ricks is inapplicable to claim 22.

10. Applicant's arguments have been considered, and are persuasive because 22-25, 28, and

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29 depend from claim 18 and claim 18 teaches a conveyerized apparatus which is credibly alleged not to be disclosed in the cited references, as such the rejection is withdrawn.

11. With specific respect to claim 22, which is still an applicable argument because other claims are rejected using the premise set forth with respect to claim 22 inasmuch as the claim discloses the iron comprising body. Applicant argued:

Regarding the feature of claim 22, "wherein said iron-comprising body includes steel," Applicants disagree with Examiner's assertion that it would be obvious to substitute an "iron-comprising body including steel" for an "iron-comprising body." The Examiner does not provide any support for this assertion that there are "inherent physical, electrical, and structural similarities and properties" of both materials. Rather, Applicants suggest that evidence can be found to support the opposite view. Iron is an element, while steel is a variety of iron containing more carbon than wrought iron. Further, steel is generally known as a "hard, strong, durable malleable alloy of iron and carbon, usually containing between 0.2 and 1.5 percent carbon, often with other constituents such as manganese, chromium, nickel, molybdenum, copper, tungsten, cobalt, or silicon, depending on the desired alloy properties." (See, American Heritage Dictionary). Regarding electrical properties, the resistivity, for example, of steel, at 20°C, varies from about 60 to about 120 ohm-cm. The resistivity of iron at the same temperature is about 10 ohm-cm. (See, Handbook of Physics and Chemistry). Applicants respectfully submit, therefore, that there are sufficient differences between an iron-comprising body including steel" and an iron-comprising body" that their interchange or substitution would not be obvious.

12. Applicant's arguments have been considered, but are not persuasive at this time. It is assumed that applicant is not suggesting that "iron comprising body" would not include steel. Rather applicant appears to make arguments to certain properties of the iron comprising body that includes steel. If applicant wants to have the limitations described, they should be included in the claim limitations as through a CIP as the limitations do not appear to be in the specification, as it was originally filed.

13. It is noted that new claim 31 is essentially the same as claim 22 prior to the most recent amendment of claim 18, and that the arguments presented in conjunction with the inclusion of steel in claim 22 also apply to new claim 31, and that if applicant changes the form of claim 18, to recite a "electrical structure" the previous rejection would likely be reinstated.

14. As to claim 30 and 37, the rejection of claim 18 based on Geshner has been withdrawn because Geshner does not disclose the conveyerized component. As to claim 37, applicant fails to specifically argue claim 37. However, the argument with respect to claim 18, related to non-analogous art seemingly are applicable. The arguments are not persuasive with respect to claim 37, because the pending claims are so general as to what is being claimed that virtually any art that addresses the issue of the claims in analogous. Additionally, it is not clear how or why applicant contends that the electro-machining is incompatible with an electroplating process.

15. As to claims 26, 27, and 35 none of the indicated claims include the conveyerized apparatus, and as such the arguments are not persuasive.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claim 26, 27, 31-37 as amended are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, it really is not clear what is being claimed when referencing an "electrical structure".

17. More specifically, claim 26 discloses "an electrical structure" wherein an "acid solution is in contact with both the iron comprising body and the chromium volume within the opening."

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Is the acid intended to be part of the structure or is it a treatment step? Of now it is assumed to be a treatment step and as such is accorded little patentable weight.

18. With respect to claim 31, here the acid is explicitly disclosed as an etchant. Is the claim a method or an apparatus with a method step? It is assumed that the latter is contemplated.

Claim Objections

19. Claims 19-25, 28-30, and 34 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically the chromium volume is drawn to a future intended use as is the type of cleaning fluid. Since the cited reference *could* perform in the same manner the claims are properly rejected. Claims 19-25 and 28-30 are properly rejected with independent claim 18. Claim 34, disclosing characteristics of the acid solution is not structurally limiting, and as such fails to further limit claim 31 and is properly rejected with independent claim 31.

Claim Rejections- 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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20. Claims 18-25 and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,139,465 to Nordengren.

21. As to claims 18-25 and 28-30, disclosing an apparatus comprising a conveyerized device, and a spray applicator wherein the spray applicator is operationally coupled to the conveyerized device. The use of acid and chromium are drawn to a future intended use, as such the claim is properly anticipated by a reference disclosing the structural components, with the caveat that the cited reference must be capable of performing the disclosed future intended use. In the instant case the nozzles would be required to be acid resistant. The same is disclosed in United States Patent No. 4,139,465 ('465). Specifically, '465 provides a dispenser nozzle intended for use in a washing operation wherein the dispenser is operationally coupled to the conveyor belt. See e.g. column 2, line 27 *et seq.*

22. To the extent that claims 26, 27, 31, and 33-36, to the extent that they are understood, are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,350,564 to Wei.

23. As an initial matter, it is noted that the claim is drawn to an "electrical structure", it follows that the disclosed method steps are accorded patentable weight only to the extent that they structurally define the electrical structure. The application of acid, regardless of concentration or temperature is only relevant to the extent that the acid impacts the claimed structure. Similarly, the placing an object on a conveyor or contacting with a probe are only relevant to the extent that they impart physical characteristics, which are claimed, to the electrical structure. The instant claim is not drawn to a method but rather is drawn to a structure,

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as indicated by the preamble. Consequently, only the claimed structure is considered in making this rejection. Additionally, the claim is ambiguous as to whether the “layer of conductive material” is the “layer of chromium” or is a separate, non-chromium layer. It will be assumed that the layer is NOT chromium, which is consistent with the specification at *inter alia* page 11 line 1. If applicant believes that the “layer of conductive material” could be a “layer of chromium” applicant is cordially requested to make this of record in response to this action, so that future correspondence can appropriately address this possibility.

24. With specific respect to claims 26 and 27 disclosing an electrical structure comprising: a chromium volume, and a layer of conductive material, wherein the chromium volume includes a layer of chromium, wherein the layer of conductive metal is on the layer of chromium, wherein the conductive metal includes an opening extending through its thickness. Wherein the opening exposes the layer of chromium. The same is identically disclosed in figure 4E and associated relevant text. It is noted that it is unclear whether the iron comprising body is part of the structure or is drawn to a future intended use. The specification suggests that the iron containing body is a probe (see element 22 of the instant invention) if the iron is a mere probe than it is not properly part of the structure. This rejection is based on the assumption that the iron is a mere probe. Arguments to the contrary should be supported in the specification as it appeared when originally filed.

25. As to claim 31 and 33-36 disclosing an electrical structure comprising a chromium volume in continuous electrical contact with an iron-comprising body. The same is disclosed by United States Patent No. 4,350,564 to Wei, see *inter alia* figure 4E and relevant associated text.

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With respect to claim 33, disclosing that the layer of chromium is on a layer of conductive metal, the same is disclosed in figure 4E and relevant associated text. Aluminum is disclosed in figure 4E and is considered to be conductive. The chromium is identified as "chromium" which is metallic chromium.

26. Claims 31-32, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,105,468 to Geshner et al. Geshner discloses an electrical structure comprising a chromium volume, an iron-comprising body in continuous electrical contact with the chromium volume, wherein the electrical structure further comprises a chromium oxide layer on the chromium volume see *inter alia* column 1, lines 34-46 and table 1 at column 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. Claims 26, 27 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geshner as discussed above, in view of, U.S. Patent No. 4,344,223 to Bulger et al.

28. Each and every limitation of claims 26, 27 and 33-35 is disclosed in Geshner as set forth above, except that Geshner fails to explicitly disclose a layer of conductive metal on the layer of chromium wherein the conductive metal includes an opening extending through its thickness,

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wherein the opening exposes the layer of chromium. However, Bulger discloses a layer of gold (conductive) over chromium acting as an etching mask, wherein the hydrochloric acid solution is in contact with the chromium volume (column 5, lines 31-38).

29. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Geshner in view of Bulger because Bulger teaches that the gold layer over the chromium volume is an effective mask when etching a pattern in the chromium volume (column 5, lines 31-38) and results in reliable, precise thin film components (column 1, lines 52 *et seq.*). As to the limitation of wherein the iron-comprising body includes steel, it would have been obvious to etch the chromium volume by contacting the chromium volume with an iron comprising body that is steel because Geshner teaches an iron-comprising body and one of ordinary skill in the art would have arrived at the same expected results, simply because steel is commercial iron that contains trace amounts of carbon as an alloying constituent.

30. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geshner as discussed above and United States Patent No. 5,149,404 to Blonder.

31. Geshner does not explicitly disclose a fluoropolymer dielectric volume bonded to the chromium volume. However, Blonder discloses wherein a photoresist volume is bonded to the chromium volume (column 1, lines 20-38).

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32. It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond a fluoropolymer dielectric volume to the chromium volume because fluoropolymer dielectric materials are conventionally used as photoresist masks in the etching of metallic films and the integrated electrical circuit fabrication industry and Blonder teaches that reticle masks made of chromium are ordinarily patterned by a radiation photoresist (column 1, lines 20-38). The use of conventional materials to perform their known functions in a conventional process is obvious. *In re Renner* 134 USPQ 343 (CCPA 1962).

33. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wei as discussed above and United States Patent No. 6,228,687 to Akram et al. Each and every limitation of claim 37 is identically taught in Wei, as set forth above, except that Wei apparently fails to explicitly disclose the word fluoropolymer. If applicant takes the position that Wei does not disclose a fluoropolymer then Akram is provided to teach fluoropolymer dielectric materials are conventionally used as photoresist masks in the etching of metallic films and the integrated electrical circuit fabrication industry. Specifically, Akram discloses: "a quantity of polymeric material, such as a polyimide, an epoxy, parylene, a fluoropolymer, or photoresist, may be disposed on active surface 14 and spread to a substantially uniform thickness, in order to define carrier substrate 18." The use of conventional materials to perform their known functions in a conventional process is obvious. *In re Renner* 134 USPQ 343 (CCPA 1962).

Potential Restriction/Election

34. Applicant is put on notice that the invention, as currently claimed, may properly be subjected to a restriction/election requirement. All claims have been treated in this Official

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action because searching the various inventions did not present an undue burden. Nonetheless, substantive amendment of the claims, or the addition of new claims, which would require an additional search, may result in a restriction/election requirement.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gentle E. Winter whose telephone number is (703) 305-3403.

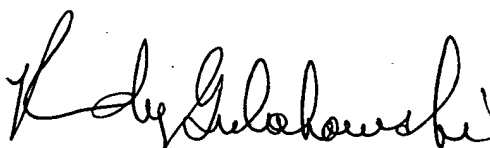
The examiner can normally be reached on Monday-Friday 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. The direct fax number for this examiner is (703) 746-7746.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gentle E. Winter
Examiner
Art Unit 1746

July 7, 2003


RANDY GULAKOWSKI
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